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ABSTRACT

The construction of new schools is a complex task requiring a great deal of executive direction that is most successfully attained if the executive function resides permanently in one individual. Data were collected through observation of schools in 6 school districts (photographs and films); document analysis (newspapers and other media, and reviews of technical reports); and interviews with principals, teachers, school board members, superintendents, parents, custodians, architects, contractors, and 20 school facilities planners. A successful facility construction process requires the coordination of three functions: executive, providing procedural order and allocating resources; professional, providing specialized knowledge; and representative, balancing attention between special interests and the common good. The facility planner fulfills the executive function, overseeing and coordinating nine fundamental steps involved in school facility construction: (1) needs assessment; (2) long-range planning, including formation of planning and advisory groups; (3) fiscal planning; (4) school building planning, which includes school site planning and selection, architectural services, and educational specifications; (5) contractor bidding; (6) building construction; (7) occupying the building; (8) postoccupancy evaluations; and (9) school facility use, which includes judging the final project and implementing plans for full utilization of the school. (TEJ)

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THE NINE LIVES OF THE FACILITIES PLANNER

Originally Presented to CERA
November 12, 1992

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This report, sponsored by the California Educational Research Cooperative (CERC), is the second of a subset of six reports being prepared from a major research project, "Opening New Schools." The original study began with a series of questions from superintendents who are members of the cooperative: How can facilities be best provided for school children? What resources are available for school construction? What financial plans are most appropriate? and How can we judge school facilities are being built in the best way possible? The research question: How are school districts providing schoolhousing for children in California? became the focus for the research. Other questions emerged as the project got underway: What are the district phases a project goes through before completion? Who are the key participants involved in the process? and How do they enact their roles? The report, "A School District Runs a Project: Constructing New Schools," describes the process by which educational facilities are constructed. This report focuses on the enactment of a key role in the process, the facilities planner.

Methodology

Twenty school facilities planners were interviewed, and a sample of six school districts was selected for extensive study. Four districts were examined in detail and the remaining two were used for comparison as necessary. The districts differed in size, methods of building new schools, degree of community involvement, and community characteristics.

Data were collected through observation, interview and document analysis. In addition to the facilities planners, persons from the selected districts were interviewed

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providing a comprehensive sample size and variety from the four districts. Those persons were likely to be: principals, teachers, school board members, superintendents, parents, custodians, architects, contractors, and others who were involved in one way or another with the construction of school facilities. State agency officials were also interviewed.

Data collected through observation included school activities and functions related to school construction. Photographs were taken to record the progress of some school sites. Films from the Lloyds Laboratories Incorporated and D. G. King Associates, "Demographics for California School Construction Funding, Simplified," and a lecture film, "Financing New School Construction," presented by an instructor, were viewed and notes were compiled.

Document analysis included reviewing newspaper accounts and other media reports of school building issues. Technical reports, such as school district manuals on financing, school site selection, long-range programs, architect's designs, state legal documents, and agency rules and regulations were collected and analyzed.

Meetings held by agencies such as the State Allocation Board (SAB) and the county facilities planners were attended for the collection of observation, interview, and document data. The Coalition for Adequate School Housing (CASH) Conference, the School Legal Defense Association (SLDA) Conference, and other local organizational meetings were also attended for the same purpose.

Theoretical Framework

Because the process of the construction of new schools is complex and comprehensive, we have decided to focus on the facilities planner in this report. The report focuses on two out of the four key ideas of the theoretical framework applied to the total

school facility construction process. The first idea is that school districts follow a process which consists of nine fundamental steps: (l) needs assessment, (2) long-range planning, (3) fiscal planning, (4) school building planning which includes school site planning and selection, architectural services, and educational specifications, (5) bidding for contractors, (6) constructing the building, (7) occupying the building, (8) post-occupancy evaluation, and (9) school building use. These steps have a beginning and an ending, but they may overlap. Each step also consists of a different composition of actors and responsibilities.

The second key idea in this theoretical framework is that in order for school districts to accomplish the nine steps, three functions must be coordinated: executive, professional, and representative. The executive function provides procedural order and allocation of resources. The professional function provides specialized and expert knowledge and skill. The representative function balances attention between special interests and the common good. Each operational function resolves specific problems during each of the nine steps. These functions show up at each step with different roles. This presentation focuses on the executive function enacted by the facilities planner as s/he works through the entire connstruction process.

Insert Figure l about here.

Analysis

The data show that the role of the executive was fluid and lodged in several persons as the process moved through the various steps. This presentation, "The Nine Lives of the

Facilities Planner" is a constructed analogy of the nine steps necessary to construct new schools and the necessary roles for each step. Each step carries different responsibilities necessitating a different role, but the data suggest that changing persons for each role which happened often within school districts in this study, may not be the most efficacious way to enact the executive role through the total construction project.

School facilities construction consists of extremes. There are lots of potential headaches and emergencies are on-going. The task is of great magnitude with high organizational visibility and expense. The necessary coordination is complex producing great vulnerability for the district and the board. The accomplishment of this project requires a great deal of expertise. The large data set we have allows many insights into the process.

The role of the facilities planner is one which fulfills the executive function, the person who is in charge of the project. This issue arises due to the complexity of tasks, multiplicity of personalities involved in the project, and the responsibility for building a school which looks like a school, not an igloo, feels like a school, not a maximum security facility, and in fact is a school.

Step 1, Needs Assessment

Role Requirement: Initiative

The process of planning and designing educational facilities begins with the need for a school building. In the case of Southern California, there has been a dire need for school housing for the waves of children showing up at the already filled-to-capacity schools. The superintendent and others in the school districts receive "bits of information" saying a new

school is needed and that's where the facilities planner enters.

The entrance of the facilities planner into the process may be likened to that of detective. S/he is responsible for tracking down accurate information from all kinds of sources and make sense out of it. It is through his/her initiative that the establishment of the need for a new school is made. If there are mistakes in the beginning, the district may overproject or underproject the need, a problem everyone pays for in the end. The objective of the facilities planner during this step is to establish the need for new schools. The key tasks are to a) gather essential data and b) determine the classroom space needed. The essential data include: tract map of development, development type to determine housing type and student ratio, district's capacity to absorb, expand, or build, CBEDs information, and cohort survival computation.

A facilities planner explained,

> We get all the tract maps, and we know where all the development is going on. We determine the new tracts and number of units and where all the yield of students will come from. The district's interest is in how many houses, the size of the houses, and the cost of the houses. The facilities planner and superintendent determine where the students are going to be housed and where the district might be active and space needed. Right now the district is yielding about 1.8 children per home. This is running about .90 - .95 K-6; the balance is broken up in mid-high and high. As an example, 1000 tract homes would produce about 950 children. The district policy is to house 720 children so that means the tract will demand a 3600-3700 square foot school K-6. Relocatables are needed to house an additional 180 children. Thirty children can be placed in a relocatable. That means 6 relocatables are needed. The total: 720 capacity K-6 school with 6 relocatables.

Step 2, Long-range Planning

Role Requirement: Organization

For the second step, long-range planning, the facilities planner enacts a social/organizational role. After the superintendent and board clearly understand the need for schools, the facilities planner is directed to gather the right human resources to get the job done. There is usually trouble and chaos with the committee organization at first. Due to so many players and many opinions, through the application of organizational skills, a good facilities planner triumphs and gets the long-range planning committee to work. A good long-range plan is a critical tool which helps legitimate the whole project.

The objective of this step is to formulate a plan. The facilities planner a) forms planning and advisory groups, b) utilizes needs analysis to project "new" district profile, c) maps out new schools' location and type, and d) contracts the architect.

Ideally, the long-range planning step requires from the facilities planner a tolerant and perceptive attitude as the various planning and advisory groups are formed. One facilities planner put it this way,

> Our 5-year master plan, longer than that sometimes, is based on our projections. We decide what schools are needed and when. For example, in our district the next three schools will be two elementary schools and a middle school based on the new development and the capacity for our district to absorb the growth. The district pulls in members from the community to work with the architect and the staff to determine what kinds of school the district should have. Currently, our projections for the next 5 years is $78 million. Of that we project we can raise $13 million from the local developers and $65 million from the voters' authorization. The community committees are chaired by me. The architect and the superintendent are also involved. The principals, teachers, and their immediate community members as well as school board member are also involved. The entire board gets involved after their committtee recommends its plan. The 5-year long-range plan includes many changes that have recently taken place.
> We use the district's 5-year plan which includes enrollment

> figures, projections, how many classrooms will be needed, a transportation plan, staffing plan, cafeteria facilities, and other district needs as a guide. Knowing the costs to fulfill long-range goals is critical because funding has to be there.

Step 3, Fiscal Planning

Role Requirement: Decision Making

During the third step, the facilities planner may be conceived as the "fiscal cat." This metaphor illustrates a need not to get caught behind the "eight ball" because getting funding is like catching mice. When you have a lot of options, you have to pick one and then call it to the "side pocket" or time will be wasted. The idea is to make the best decision and tie the whole financial package together. Long-range fiscal planning is a big responsibility and has far reaching implications for a school district's future financial health.

The objective during this step is to obtain a complete funding package. Four fundamental tasks comprise this step, a) the funding options are determined, b) support groups are formed, c) technical assistance is sought, and finally, d) the funding decision is made. Four different quotes have been selected to illustrate how this fiscal planning takes place. A facilities planner described the manner by which options are considered.

> Currently, the LeRoy Greene Lease-Purchase Agreement provides funds for school construction in the form of grants. There are also State Bond Authorizations. The Mello-Roos Bill also funds school districts and local districts are expected to raise money to match. This has been successful in our district with the current developer. Recently, with the rapid growth of communities, the developer fees have become a popular source of funding for our districts. In many districts the main sources have been the 50-50 partnerships with the state, GOBs, and Mello-Roos. Even though we had the property tax revolt, raising funds for schools has essentially remained a

property owner's responsibility.

When funding is sought from the state, the project can take 2- or 3 years to complete. When the state is out of money, school districts are put in a situation of having to search for alternative means for funding their schools.

An example of the way GOBs have worked is the following from a facilities planner.

> On June 30th our school board called for an election, November 7th, to ask for a General Obligation Bond. We are going that route now. We are asking for $65 million. If we are successful in November, we will be able to sell bonds by March 1990.

The local newspaper reported a successful GOB campaign in this way.

> The first school bond to be passed in the county since 1977 approved a $38.5 million GOB with 71.4% of the vote to construct a high school. The city of Cozy Corner, a 70.2% of the voters supported a $65 million measure to build a handful of schools including a second high school. The officials asked for $65 million which would be combined with $13 million in developer fees to build 4 elementary schools, two middle schools, and 1 high school. The budget for building schools includes the cost of the land, the architect, and everything else. After passage of the issue, the district went to New York for a bond rating receiving an "A:. The bonds were picked up with the lowest interest in bonds sold in the last 5 years.

An example of the use of a combination of options is University's case. The facilities planner says,

> University has gone to the people twice in the last couple of years to try to get a bond issue to pay for three elementary schools and a high school. After failing the two bond issues, we went to the state and asked, "If we raise half of the money we need, and only request half of the funds we need for our construction, will you move us up in the priority list? The request was granted. The state allocated $23 million, instead of $44 million. The funding for Green Wash Elementary School is half from the state, 1 million from the developer, and

> the remainder from the school district. The fourth example is the one in which the best source of money for the Dulce Unified School District is redevelopment money. They are protected with that source of funds for 8-10 years.

Step 4, Educational Specifications Development, Site Selection, Building Design

Role Requirement: Integration

For the fourth step, the facilities planner acts much like a concert master. There are many issues to confront and decisions to make with a variety of actors. There is land to buy and many architectural and educational specifications to consider. It is akin to everybody having their own idea about what music to play, while the facilities planner stays focused and keeps everyone finely tuned in order to be able to integrate all of the music from all sections of the orchestra. There is so much technical detail at this stage that if everyone is coordinated, it all comes together and a concert is ready to be performed; if not, it's a lot of noise, and confusion, the district may get something is does not want.

Step four consists of educational specifications development, site selection, and building design. The objective is to integrate all of the specifications and seek state approval for schoolhouse design. The major tasks for the facilities planner are: a) form a committee to determine educational specifications, b) form a site selection committee, and c) approve style and design of building.

This step is complicated because ideally, three activities are carried out simultaneously. The facilities planner explained it this way.

> We pull in members of the community to work with the architect and the staff to determine the educational specifications of our school. The architect then works on some

> basic design. At present the district is at the preliminary stages regarding new sites purchasing. We have selected a site, and an offer on the site will be given soon. You work with your architect and your staff to determine the best location for that school.
> The architect and I begin the process. We usually have a design committee that are volunteers. Most of them are teachers and administrators. We talk about what we need for the school, but we have a philosophy that drives our school designs, and that philosophy is based on knowledge of how we think students learn. That becomes the foundation for our design. There are many people that you work with, the architect and his staff, the state department people, and your community.
> The architect works with the community advisory committee on the design of the school. This group determines what they would not and would like to see in a new school. The architect presents the design to the state. It takes the architect about 6 months to finish his design and about 6 months for the state to approve it. The limitations placed on the design are linked to the budget and state requirements.

When simultaneity and integration don't take place, the disappointed principal may have to say something like the following,

> The drawback is that the architect had something in mind for a new school and the committee had something different. We wanted a Spanish Mediterranean style to fit into the community, but what we have is a modern school with a red tile roof and a red stripe down the side of the building to make it look more Spanish.

Step 5, Bidding and Contracting

Role Requirement: Authorization

The fifth step may be conceived as authorization for the facilities planner to sign on the crew who will construct the schoolhouse. This is no small matter. The school must be delivered and performance assured. A good crew works together with capability. The

architect and the contractor seek compatability with each other. This step requires a plan for "smooth sailing."

The fifth step's bidding and contracting objective is to conduct the bid and award a contract which authorizes expenditures and commitment for superior performance. The key tasks are to a) prepare and advertise bid notification, b) conduct pre-bid conferences, and c) award the contract. The pre-bid conferences are important at this stage and should include: assessing contractor competence and assuring professional working relationships between the contractor and architect. The facilities planner explains the bidding process in the following statement.

> All school projects are put out for competitive bids after they have been completely designed. The architect interacts with me. The OSA has already approved the plans and the school is ready to build by the time that the general contractor sees the plans. Architects open the plans up for bidding and contractors request them. All submit proposals on the same day. It is open for the public. Whoever is the low bidder is selected to do the job.

Step 6, Facility Construction

Role Requirement: Supervision

During the sixth step, the facilities planner, so to speak, puts on his/her "hard hat" and "sets sail." Many outsiders think this is when the project begins. There is normally a send off, with members of the press and other constituencies. Often, it is the facilities planners' "maiden voyage", a first experience, but knowing how to supervise is the key to this step. At this step leadership and the benefits of careful prior planning pay off.

During the facility construction step, the objective is to build a schoolhouse. The key tasks are: a) plan public ceremony and ground-breaking, b) establish parameters for

architect and contractor, c) monitor changes and deadlines, d) conduct work session meetings on a regular basis, and e) prepare progress reports for community and school district.

This step is one in which the facilities planner may be superceded by the architect and contractor. Staying mindful of the key tasks at this stage will avoid conflict between the professionals. One facilities planner described how he maintained the executive role.

> I was part of the ground-breaking ceremony. It is basically to introduce everybody that is involved in the project. At this one we had the superintendent of schools, the principal, the architect, a couple of secretaries, and I. That was the first time that all of us gathered as a unit. We just introduced ourselves and the superintendent just stuck the golden shovel into the ground, had her picture taken, and it was over.
> During construction what you want to do is reduce changes with the design. On a weekly basis we meet with the contractor on site. We have had time to change or clarify some issues and develop a good working relationship. Attitudes, cooperation with the school district, the architect, and whether the plans on specifications are clear and thorough need to be worked on. The building has to be completed for the amount under contract. We have to build it for $5 million 7 hundred thousand and we have to do it in 14 months. If we run behind we can lodge a lawsuit.

Step 7, Occupying the Building

Role Requirement: Leadership

The seventh step is when the facilities planner moves everyone into the new building. Leadership is demonstrated by making sure the school's safe for kids and that's not an easy task. It's not just occupancy permits...the board has to say it's "child proof" so no one gets hurt. Special liabilities and problems need to be taken care of and experts still need to be around to make sure everything works. Many problems can surface on moving day.

This step's objective is to take occupancy of a new place. The key tasks during this period are: a) ensure all appropriate school staff appointments, b) purchase essential equipment, c) seek board approval for student occupancy, and d) lead the dedication ceremony and public opening of the new school.

The tendency during this step is for the facilities planner to move on to the next building and relinquish much of his/her responsibility to the principal. But at this point, much unique and essential knowledge of the project is in the facilities planner's mind and cannot be replicated easily by another individual. One of the facilities planners explained how she retained continuity and the upper hand.

> We have a scheduled completion date of November lst. That is when the contractor expects to be done. We are going to wait until it is ready-turn-key. We do not want to move into the facility when they still have to come to fix something. We want to get everything fixed first. We had some vandalism at another site where a contractor left a door open and some of our things were destroyed. So we do not want to share the site with them. We are covered in the trailers for another couple of months. We planned some leeway. We planned a ceremony for the opening for January. I am hoping that we can get the kids in there in November.

Step 8, Post-occupancy Evaluation

Role Requirement: Judgement

For the eighth step the facilities planner has a difficult role to play as the customer relations person, smiling at everyone, whether they're complaining or complimenting. The compliments are usually passed on to the district superintendent and the board. Problems are handled by the facilities planner. By this time almost everyone is tired of the project, but cooperation is still important because the building is new for the community and for those moving into it. The mistakes cannot be hidden anymore as judgement of the work is

being made. A record of comments on the building's acceptance may be important and valuable to the district for future project planning.

This step's objective is to judge the adequacy of the building. The major tasks are: a) accept and log complaints, grievances, and compliments, b) lodge and follow through on claims, and c) remain active and accessible.

This step is one where the accessibility of the facilities planner is critical for two reasons: to respond to complaints promptly and to learn from the finished project for better success on the future ones. One executive commented,

> I think Green Wash will be on display as were those other schools the architect took us through. We will end up being a school that other school districts will go through. I look forward to it. There isn't anything I like least. It's very pretty up here. It's a rural type of atmosphere. The things I like best are: the computer lab, multi-purpose room, cafeteria and kitchen facilities, and a good library with lots more books.

Step 9, School Facility Use

Role Requirement: Negotiation

The facilities planner leaves the site during the ninth step. If s/he disappears too soon, s/he will not be accessible when problems arise. The facilities planner's presence is necessary until the building has taken on a "life of its own." If the schoolhouse is right, the facility has a future. At this stage, the facilities planner can negotiate the school's use and see to it that the building will make its own contribution to the community. The key tasks for the facilities planner are: a) review and pass judgement on the building, b) plan for the full utilization of the school, and c) finally disappear.

As a building becomes representative of an institution, it evokes feelings such as

those expressed by an essential caretaker, a custodian.

> I like this building because it is unique. A lot of adults come in here and they think it is a shopping mall. Just the way it looks when you walk down the hallways because of all the windows on your left and above. It is really an uplifting school. You do not feel down or in a dark mood because there is always light here and that was the whole idea behind this school. When the architect drew up the plans a lot of natural light was used. All classrooms and hallways have skylights. I believe the library has one, but I can't recall offhand. But it is real bright. It makes you feel good when you are here. The atmosphere here is different from other schools because we are all under one roof here. And when necessary the kids could eat indoors whereas on a day like today, of course, they are going to eat outside on the picnic tables.

The tale of the nine lives of the facilities planner is a tale of hope and a tale of woe. When the roles are enacted well and if you get it right, "it's perfect." When the roles are faulty or fragmented, the building may not be the best place for those who are to live and work in it.

In conclusion, the construction of new schools is a complex task requiring a great deal of executive direction throughout the process. Having the executive function residing permanently in one person increases the likelihood of success in school construction. Second, executive direction is enacted by changing the types of responsibility for each step. For example, initiative is required during the needs assessment step, but integration is necessary for the fourth step. Likewise, calling for different responsibilities from the professional and representative functions at each of the steps ensures success. Third, the complexity of the project and process cannot serve to justify losing sight of the type of building facility and desired outcomes. The finished product has to be a schoolhouse for educating children.